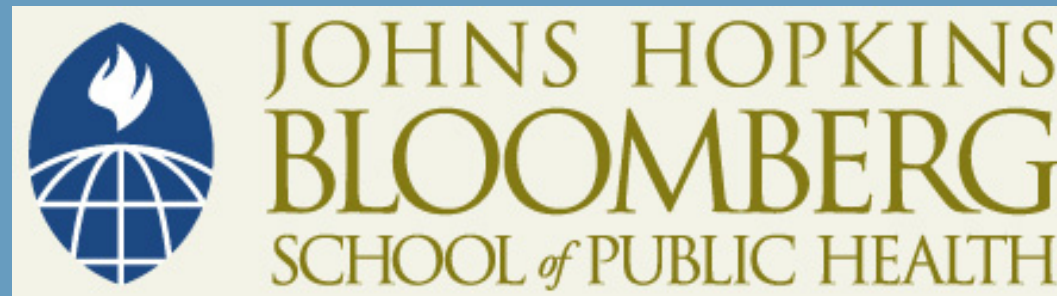


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JOHNS HOPKINS
BLOOMBERG
SCHOOL *of* PUBLIC HEALTH

Section D

Causation and Conceptualization

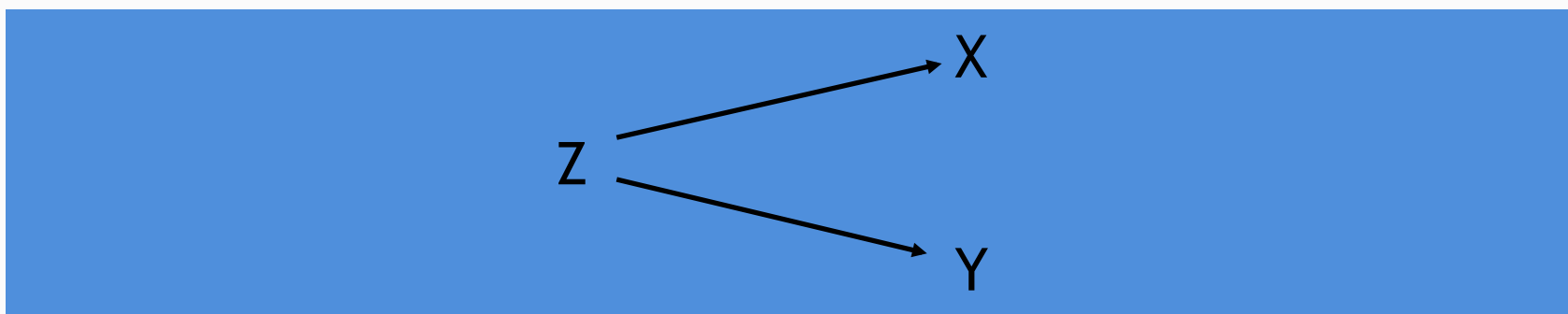
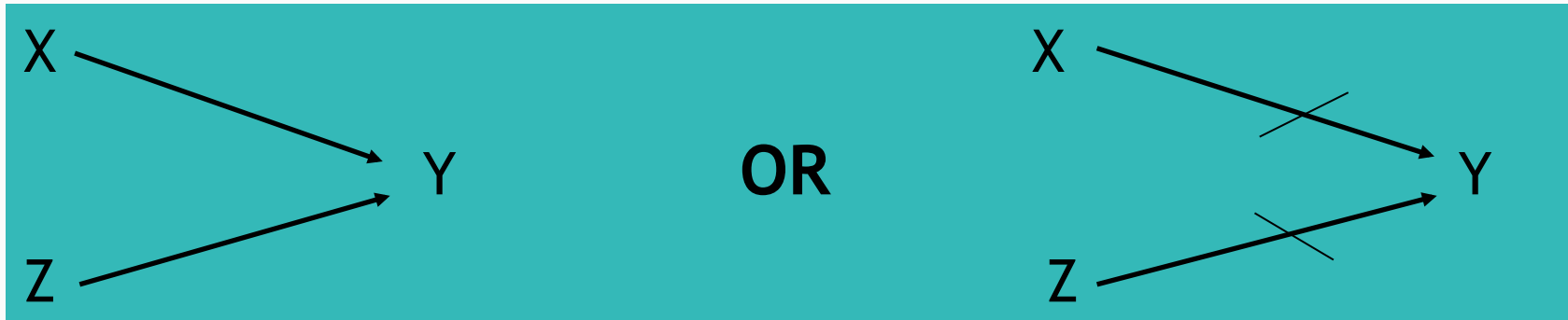
Process and Causation

- Understanding process usually means understanding causes
 - What **causes** development to unfold the way it does for a particular individual?
- Causation can be broad or narrow
 - Broad: low control job causes cardiovascular disease (CVD)
 - Narrow: endothelial function leads to degree of arterial plaque

Establishing Causality

- X precedes Y in time—the outcome cannot occur before the purported cause
- X is empirically correlated with Y—the variables vary together—when one changes the other must change
- The relationship between X and Y is not caused by some third factor Z—that is, the relationship is non-spurious

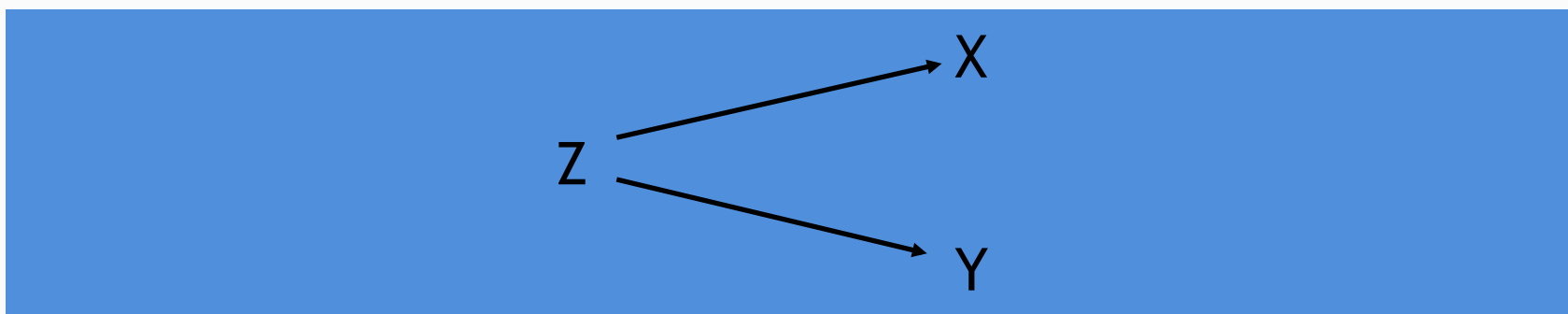
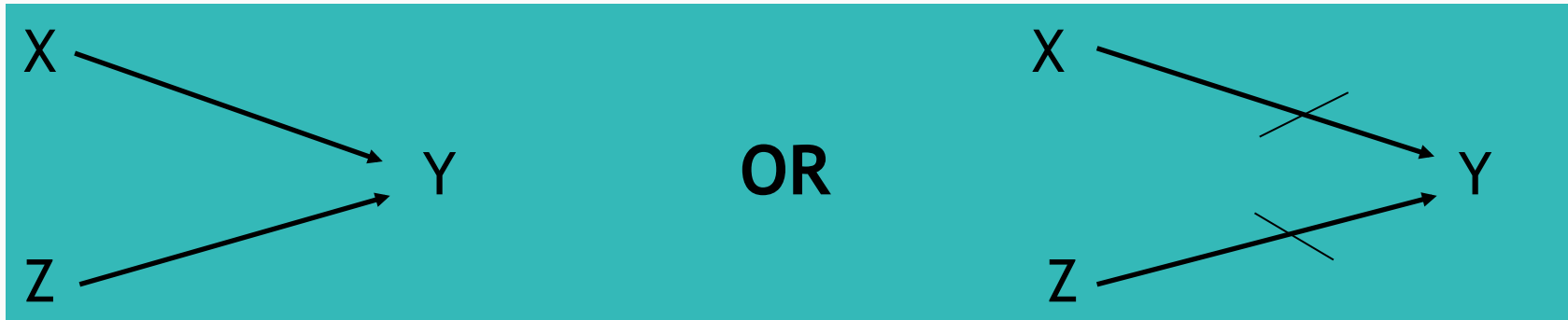
Establishing Causality: Spuriousness



Possible Fourth Criterion for Causality

- Should be able to explain the mechanisms that link X and Y, that is, the underlying process that creates the causal relationship
- Identification of mechanisms often generates causal chains and the identification of intervening variables

Establishing Causality: Spuriousness



Childhood SES and CVD

Childhood

Family
socioeconomic
status



Adulthood

Cardiovascular
disease

- Temporally prior?
 - Yes
- Associated?
 - Yes
- Spurious?
 - Unclear
- Mechanism?
 - Unclear

Conceptual Frameworks

- Provide a way of thinking about and describing a research or practical problem
 - How to “frame” it
 - How to “conceptualize” components and processes
- Though abstract, makes problem concrete
- Not theories but can aid development and testing of both theories and interventions

Conceptual Frameworks

- Tool for thinking clearly about inherently complex problems
- Start developing a conceptual framework for own work
- Central to educational goals

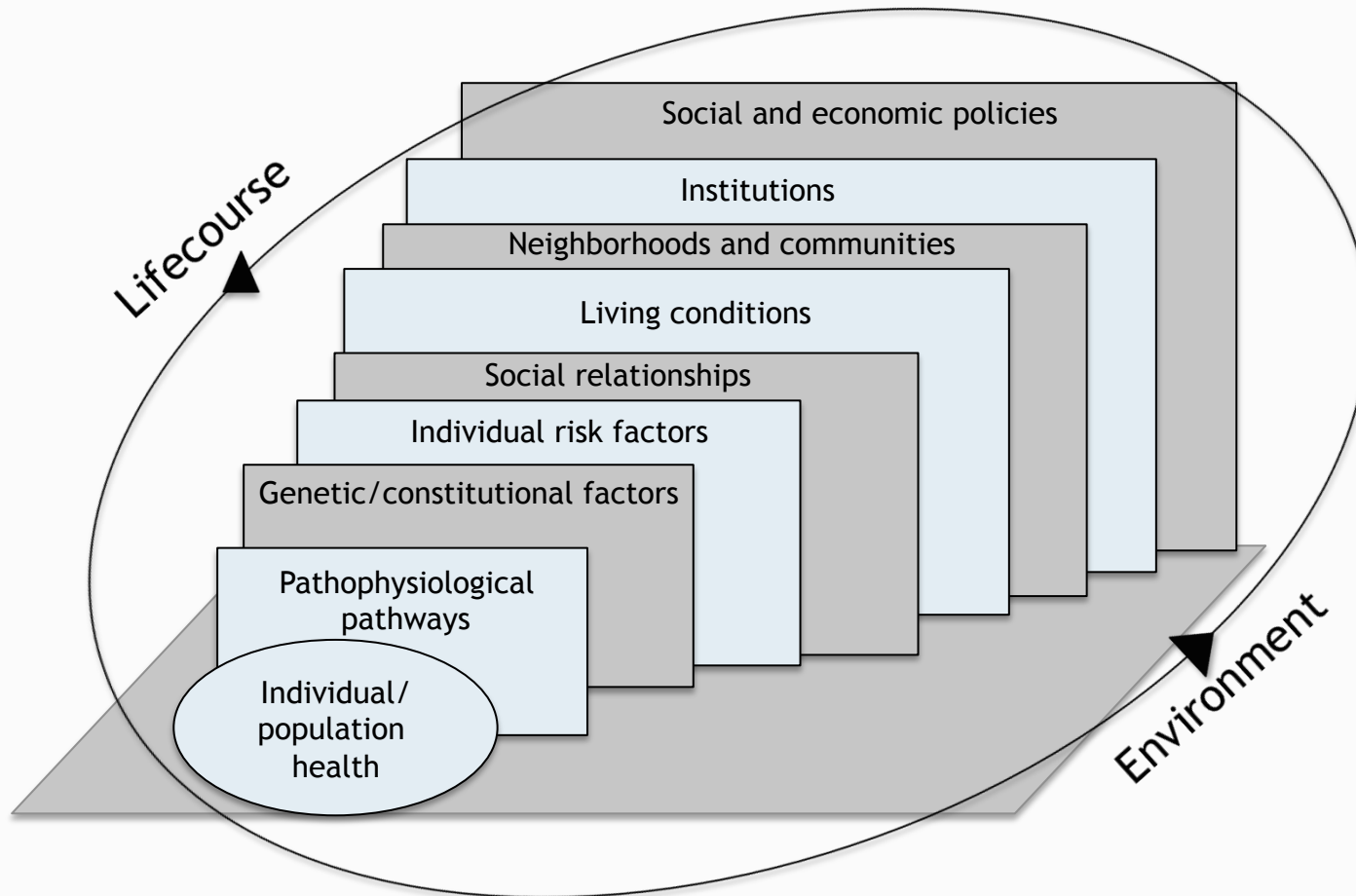
Conceptual Framework Shows

- Interrelationships among predictors and how they lead to outcome
 - Diagrams a process
- Population view
 - General, applies to many settings
 - Probabilistic, not deterministic
 - Does not show relative weights of determinant

Usually Represented by a Diagram

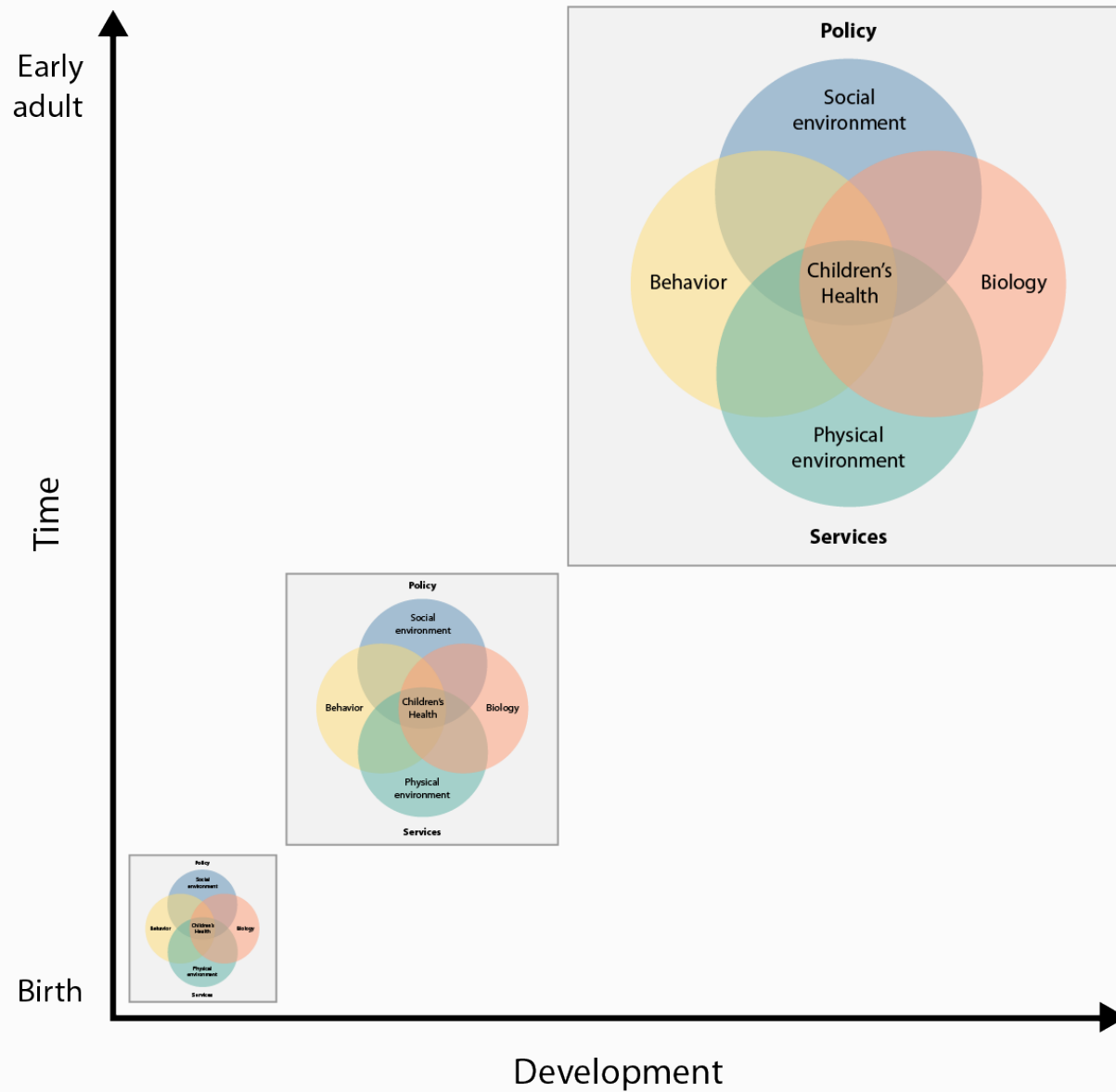
- Boxes to represent outcomes, predictors, groups of both
 - “Variables,” “levels,” “determinants”
- Connected by arrows
 - Sometimes, but not always indicates causation (or reciprocal causation)
- Together shows interrelationships among predictors and how they lead to outcome—diagrams a process

Population Health



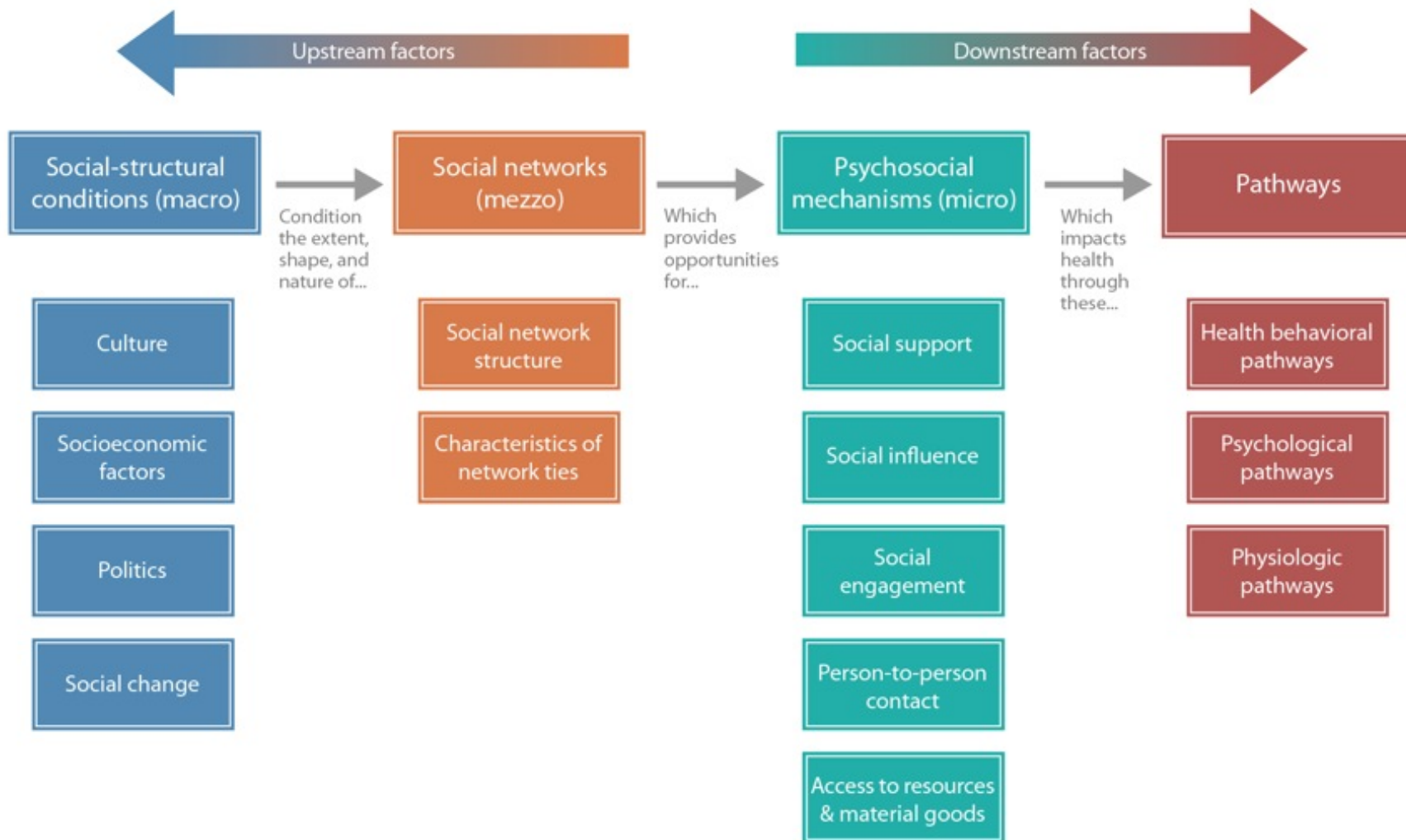
Adapted from : Kaplan, Everson, & Lynch. (2000).

Children's Health



Adapted by CTLT from Institute of Medicine. (2000).

Social Influences on Health



Adapted by CTLT from Berkman & Glass. (2000).



Source: Berkman & Glass. (2000).

Adult Lung Disease

